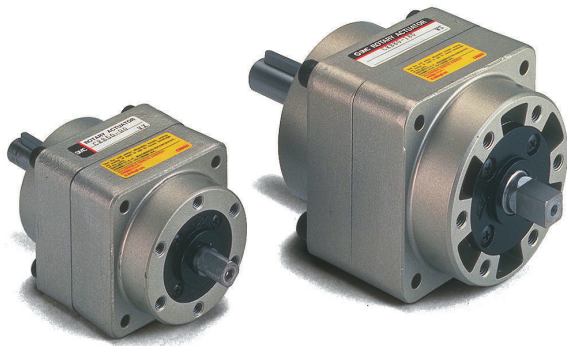


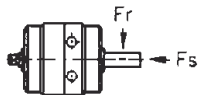


### VANE TYPE ROTARY ACTUATOR: BORE SIZES Ø50•80•100MM SERIES NCRB

- ✓ 90°, 180°, 270° rotation
- ✓ Special vane seal design eliminates leakage
- ✓ Low operating and start-up torque
- ✓ Long operating life

#### TECHNICAL SPECIFICATIONS

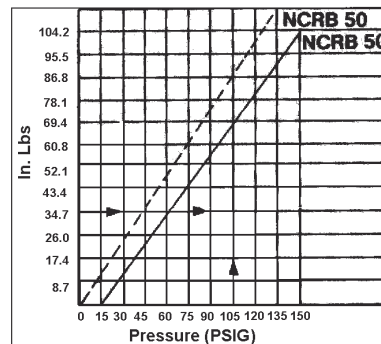
|                     |                                                                          |
|---------------------|--------------------------------------------------------------------------|
| Media               | Compressed Air                                                           |
| Working Pressure    | 0.1 ~ 1.5MPa / 15 ~ 220 PSI                                              |
| Ambient Temperature | 5 ~ 60°C / 40 ~ 140°F                                                    |
| Rotation Angle      | 90°, 180°, 270°                                                          |
| Seal Material       | Buna N                                                                   |
| Drive Shaft         | Double Shaft, One side with key and groove, other side is a square shaft |



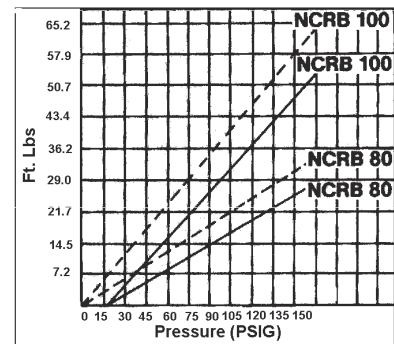
#### Maximum shaft loading and kinetic energy

| Type    | Fr (N) | Fs (N) | E max (Nm) |
|---------|--------|--------|------------|
| NCRB50  | 250    | 200    | 0.084      |
| NCRB80  | 500    | 500    | 0.040      |
| NCRB100 | 600    | 550    | 0.061      |

#### TORQUE SPECIFICATIONS SERIES NCRB

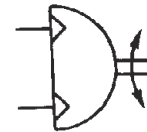


Actual —————

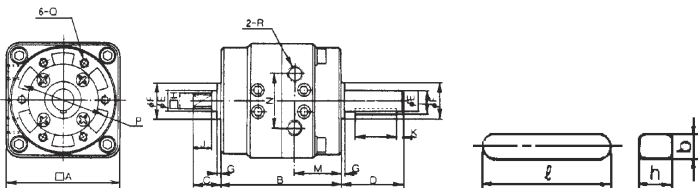


Theoretical - - - - -

#### SYMBOLS



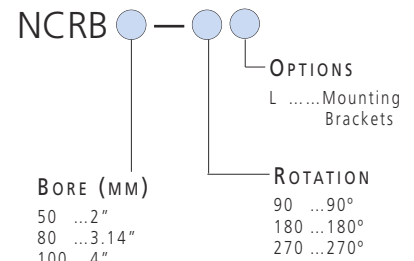
#### DIMENSIONS (INCH) NCRB50~100



| Model   | A    | B    | C    | D    | E    | F    | G    | H    | J    | K    | L    | M    | N    | P    | Q          | R        | b    | h    | ℓ    |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|----------|------|------|------|
| NCRB50  | 2.64 | 3.38 | 0.77 | 1.55 | 0.47 | 0.98 | 0.12 | 0.39 | 0.51 | 0.20 | 0.53 | 1.34 | 1.18 | 1.97 | M6x1x10    | NPT 1/8" | 0.16 | 0.16 | 0.79 |
| NCRB80  | 3.74 | 4.06 | 0.93 | 2.11 | 0.67 | 1.18 | 0.12 | 0.51 | 0.63 | 0.20 | 0.75 | 1.57 | 1.77 | 2.75 | M8x1.25x13 | NPT 1/4" | 0.20 | 0.20 | 1.42 |
| NCRB100 | 4.92 | 4.92 | 1.18 | 2.56 | 0.98 | 1.77 | 0.16 | 0.75 | 0.87 | 0.20 | 1.10 | 1.97 | 1.97 | 3.15 | M10x1.5x13 | NPT 1/4" | 0.28 | 0.28 | 1.57 |

#### HOW TO ORDER

#### NCRB ROTARY ACTUATOR



#### OPTIONS BRACKETS

#### NCRB50~100

| Model   | Bracket No | Includes        |
|---------|------------|-----------------|
| NCRB50  | CRB50-Y-1  | 2"L" Brackets   |
| NCRB80  | CRB80-Y-1  | with 8 Mounting |
| NCRB100 | CRB100-Y-1 | Screws          |

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VANE TYPE ROTARY ACTUATOR:  
BORE SIZES Ø10•15•20•30MM  
SERIES NCRB1BW

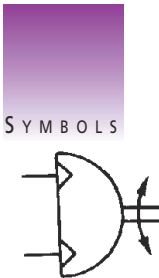
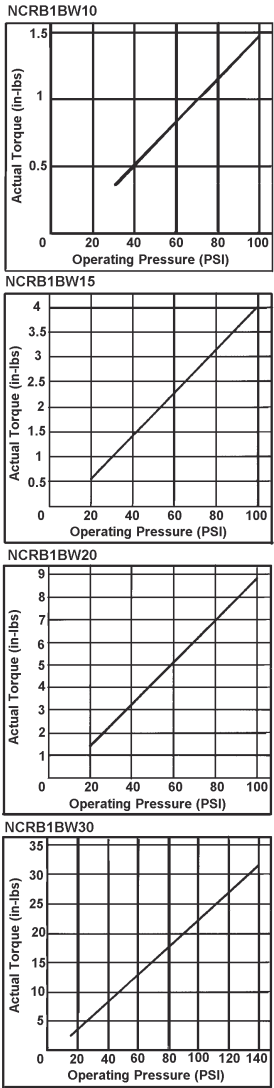
- ✓ 90°,180°,270° rotation
- ✓ High reliability and long life
- ✓ Light weight
- ✓ Optional auto switch and adjustable rotation



TECHNICAL  
SPECIFICATIONS

| Model                        | CRB1BW10                          | CRB1BW15 | CRB1BW20             | CRB1BW30 |
|------------------------------|-----------------------------------|----------|----------------------|----------|
| Rotation                     | 90° / 180° / 270°                 |          |                      |          |
| Fluid                        | Air                               |          |                      |          |
| Proof Pressure               | 1.05MPa / 153PSI                  |          | 1.5MPa / 218PSI      |          |
| Operating Pressure Range     | 0.14 ~ 0.7MPa / 20~100PSI         |          | 0.1~0.23MPa/15~40PSI |          |
| Rotation Speed Range (s/90°) | 0.03~0.3                          |          | 0.04~0.3             |          |
| Maximum                      | 90°                               | 5        | 4                    | 4        |
| Operating                    | 180°                              | 3.5      | 3                    | 3        |
| Cycle (Nz)                   | 270°                              | 2.5      | 2                    | 2        |
| Ambient and Op Fluid Temp    | 5 ~ 60°C / 40 ~ 140°F             |          |                      |          |
| Lubrication                  | No Lubrication Required           |          |                      |          |
| Type Of Shaft                | Double End Shaft / Both With Flat |          |                      |          |
| Type Of Mounting             | Basic, Flange                     |          |                      |          |
| Rotation Tolerance           | +5° -0                            |          | +4° -0               |          |

TORQUE  
SPECIFICATIONS

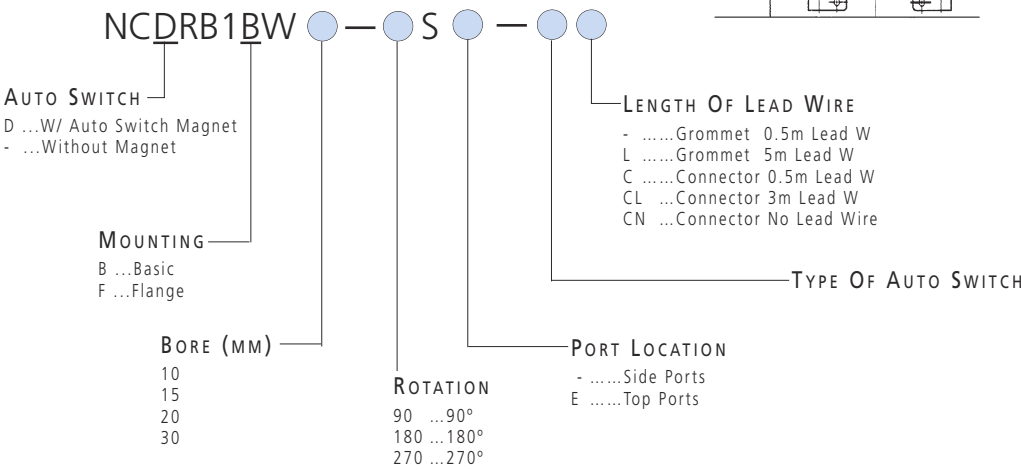


FITTING LOCATION AND  
ROTATION OF AUTO SWITCH

| Mounting direction | Switch with right hand mounting | Switch with left hand mounting |
|--------------------|---------------------------------|--------------------------------|
| Type               | D-②③④①                          | D-②③④②                         |
|                    |                                 |                                |

HOW TO  
ORDER

NCRB1BW ROTARY ACTUATOR



FOR MORE TECHNICAL INFORMATION ON  
THIS SERIES, PLEASE REFER TO CAT:N350

DIMENSIONS  
SEE NEXT PAGE

ACCESSORIES  
SEE NEXT PAGE



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### DIMENSIONS

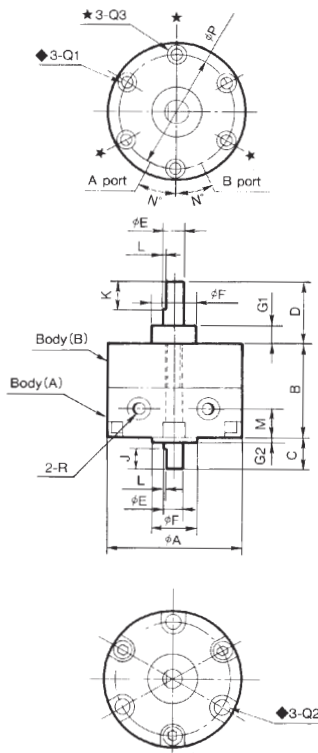
#### WITH SIDE PORTS

NCRB1\_W\_-\_S ROTARY ACTUATOR

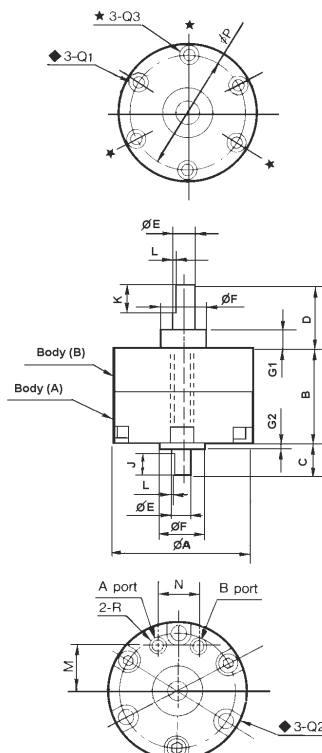
### DIMENSIONS

#### WITH TOP PORTS

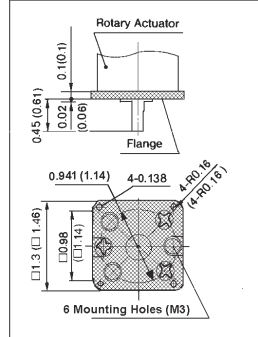
NCRB1\_W\_-\_SE ROTARY ACTUATOR



#### Top ports: NCRB1W○-○SE



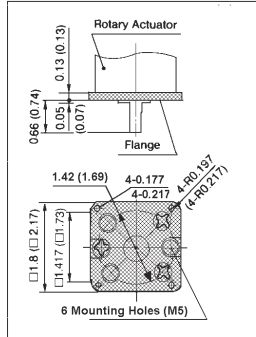
#### Flange ("F")



Dim for NCR1W10

( ): Dim for NCRB1W15

#### Flange ("F")



Dim for NCR1W20

( ): Dim for NCRB1W30

| Model                  | A    | B    | C    | D    | E     |            | F     |           | G    |      | J    | K    | L    | M    | N    | P    | Q (Depth)          |                |                   | R        |      |      |
|------------------------|------|------|------|------|-------|------------|-------|-----------|------|------|------|------|------|------|------|------|--------------------|----------------|-------------------|----------|------|------|
| (Dimensions in Inches) |      |      |      |      |       | Tolerances |       | Tolerance | G1   | G2   |      |      |      |      |      |      | Q1                 | Q2             | Q3                | 90°      | 180° | 270° |
| NCRB1_W10-_S           | 1.14 | 0.59 | 0.31 | 0.55 | 5/32  | -0.00015   | 3/8   | 0         | 0.12 | 0.04 | 0.20 | 0.35 | 0.02 | 0.20 | 0.33 | 0.37 | 5-40UNC<br>(0.2)   | 0.14<br>(0.26) | -                 | 10-32UNF |      |      |
| NCRB1_W10-_SE          |      |      |      |      |       | -0.00045   |       | -0.0012   |      |      |      |      |      |      |      |      |                    |                |                   | M3       |      | M3   |
| NCRB1_W15-_S           | 1.34 | 0.79 | 0.35 | 0.71 | 3/16  | -0.00015   | 15/32 | 0         | 0.16 | 0.06 | 0.24 | 0.39 | 0.02 | 0.20 | 0.25 | 1.14 | 5-40UNC<br>(0.39)  | 0.14<br>(0.24) | 5-40UNC<br>(0.2)  | 10-32UNF |      |      |
| NCRB1_W15-_SE          |      |      |      |      |       | -0.00045   |       | -0.0016   |      |      |      |      |      |      |      |      |                    |                |                   | M3       |      | M3   |
| NCRB1_W20-_S           | 1.65 | 1.14 | 0.39 | 0.79 | 15/64 | -0.00015   | 9/16  | 0         | 0.18 | 0.06 | 0.28 | 0.39 | 0.02 | 0.35 | 0.55 | 1.42 | 8-32UNC<br>(0.53)  | 0.18<br>(0.43) | 8-32UNC<br>(0.3)  | 10-32UNF |      |      |
| NCRB1_W20-_SE          |      |      |      |      |       | -0.00045   |       | -0.0016   |      |      |      |      |      |      |      |      |                    |                |                   |          |      |      |
| NCRB1_W30-_S           | 1.97 | 1.57 | 0.51 | 0.87 | 5/16  | -0.00002   | 5/8   | 0         | 0.20 | 0.08 | 0.31 | 0.47 | 0.04 | 0.39 | 0.25 | 1.69 | 10-24UNC<br>(0.71) | 0.21<br>(0.65) | 10-24UNC<br>(0.4) | 10-32UNF |      |      |
| NCRB1_W30-_SE          |      |      |      |      |       | -0.00006   |       | -0.0016   |      |      |      |      |      |      |      |      |                    |                |                   |          |      |      |

### ACCESSORIES

NCRB1BW ROTARY ACTUATOR

| SWITCH MOUNTING CLAMP ASSEMBLY |           |
|--------------------------------|-----------|
| Model                          | Part No   |
| NCDRB1BW10                     | P211170-1 |
| NCDRB1BW15                     | P211190-1 |
| NCDRB1BW20                     | P211160-1 |
| NCDRB1BW30                     | P211180-1 |

| FLANGE MOUNTING ASSEMBLY |           |
|--------------------------|-----------|
| Model                    | Part No   |
| NC_R1FW10                | P211170-2 |
| NC_R1FW15                | P211190-2 |
| NC_R1FW20                | P211160-2 |
| NC_R1FW30                | P211180-2 |

FOR MORE TECHNICAL INFORMATION ON  
THIS SERIES, PLEASE REFER TO CAT:N350

MORE  
DIMENSIONS  
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MORE  
ACCESSORIES  
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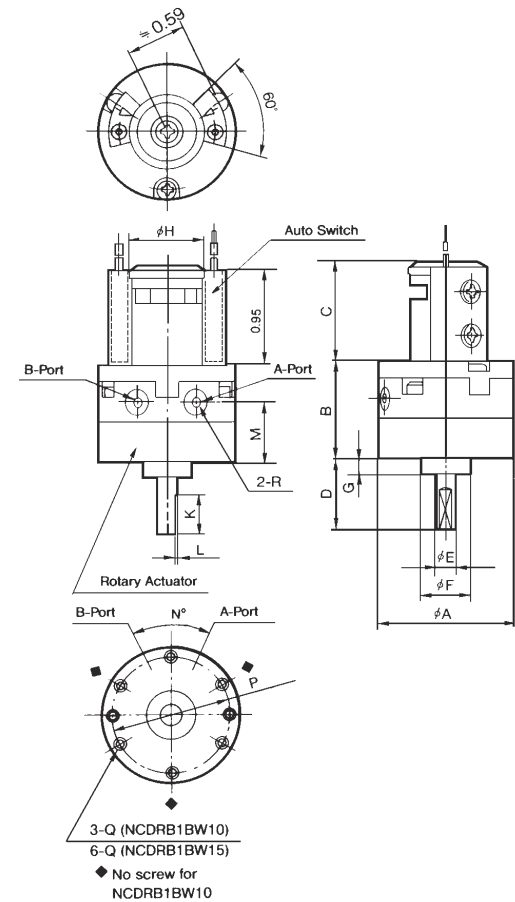
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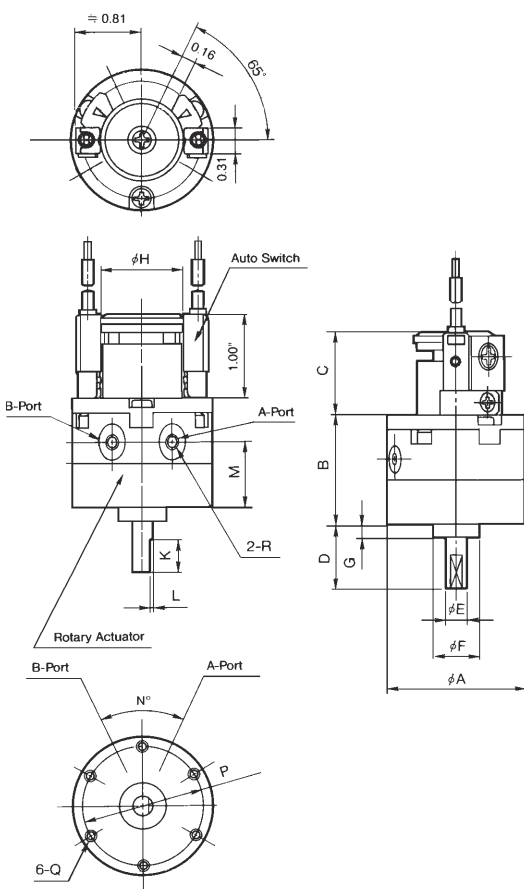
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DIMENSIONS  
SERIES NCDRB1BW10~15



DIMENSIONS  
SERIES NCDRB1BW20~30



| Model                  | A    | B    | C    | D    | E     |                      | F    |              | G    | H    | K    | L    | M    | N  | P    | Q                  | R                   |
|------------------------|------|------|------|------|-------|----------------------|------|--------------|------|------|------|------|------|----|------|--------------------|---------------------|
| (Dimensions in Inches) |      |      |      |      |       | Tolerances           |      | Tolerance    |      |      |      |      |      |    |      | (Depth)            |                     |
| NCDRB1BW10             | 1.14 | 0.75 | 0.98 | 0.55 | 5/32  | -0.00015<br>-0.00045 | 0.35 | 0<br>-0.0014 | 0.12 | 0.73 | 0.35 | 0.02 | 0.39 | 50 | 0.94 | 5-40<br>(0.2)      | M5 (10-32NOM)<br>M3 |
| NCDRB1BW15             | 1.34 | 0.94 | 0.98 | 0.71 | 3/16  | -0.00001<br>-0.00017 | 0.47 | 0<br>-0.0017 | 0.16 | 0.73 | 0.39 | 0.02 | 0.59 | 50 | 1.14 | 5-40<br>(0.2)      | M5 (10-32NOM)<br>M3 |
| NCDRB1BW20             | 1.65 | 1.32 | 1.00 | 0.79 | 15/64 | -0.00015<br>-0.00045 | 9/16 | 0<br>-0.0016 | 0.18 | 0.98 | 0.39 | 0.02 | 0.79 | 50 | 1.42 | 8-32UNC<br>(0.28)  | 10-32UNF            |
| NCDRB1BW30             | 1.97 | 1.79 | 1.00 | 0.87 | 5/16  | -0.0002<br>-0.0006   | 5/8  | 0<br>-0.0016 | 0.20 | 0.98 | 0.47 | 0.04 | 1.18 | 50 | 1.69 | 10-24UNC<br>(0.40) | 10-32UNF            |

ACCESSORIES  
AUTO SWITCH SPECIFICATIONS

| Series    | Model    |          | Type                   | Load Voltage                | Load Current       | Power Source | Internal Voltage Drop | Indicator Lamp |
|-----------|----------|----------|------------------------|-----------------------------|--------------------|--------------|-----------------------|----------------|
| NCRB1BW10 | LH Mount | RH Mount |                        |                             |                    |              |                       |                |
|           | D-97L    | -        | Reed                   | 24VDC                       | 5~40mA             |              | Max 2.4V              | ON: Red LED    |
|           | D-90L    | -        | Reed                   | 24VDC or less               | Max 50mA           |              |                       | None           |
|           | D-S992L  | D-S991L  | 3 Wire Solid State NPN | 28VDC or less               | Max 150mA          | 5~28VDC      | 1.5V Max              | ON: Red LED    |
| NCRB1BW20 | D-T992L  | D-T991L  | 2 Wire Solid State     | 10~28 VDC                   | 5~150mA            |              | 4V Max                | ON: Red LED    |
|           | D-R732L  | D-R731L  | Reed                   | 24VDC; 100VAC               | 5~40mA; 5~20mA     |              | Max2.4V               | ON: Red LED    |
|           | D-R802L  | D-R801L  | Reed                   | 24VDC/AC or less; 100VDC/AC | Max 50mA; Max 20mA | 5~28VDC      |                       | None           |
|           | D-S792L  | D-S791L  | 3 Wire Solid State NPN | 28VDC or less               | Max 150mA          |              | 0.8V Max              | ON: Red LED    |
| NCRB1BW30 | D-T792L  | D-T791L  | 2 Wire Solid State     | 10~28 VDC                   | 5~150mA            |              | 3V Max                | ON: Red LED    |

Note: Pre-wired Switches with 3/4 Pin Connectors available, please consult SMC Customer Service



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